

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB075NM

Site Name: Shallow Cool

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on nearly level to gently sloping undulating topography with slopes ranging up to 15 percent. Slope average is 3 to 5 percent but may range as high as 15 percent. Aspect varies but is not significant. It occurs at elevations ranging from 4,400 to 6,600 feet above sea level. The differentiating characteristics of this site are shallow sandy loams occurring from 5 to 10 inches over caliche.

Land Form:

1. Break
2. Ridge
3. Hillside

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,400	6,600
Slope (percent)	3	15
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are not uncommon. Seventy five percent of the moisture usually falls during the six-month period of April through October. Most of this summer precipitation comes in the form of high intensity-short duration thunderstorms.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. The Average annual temperature is about 50 degrees F with extremes of – 29 degrees F in the winter and 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost falling in early May and the first killing frost in early October.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, about 40 percent of the annual precipitation fall at a time favorable for cool-season species. Because of the soils on this site, the vegetation can respond quickly to a light rain. Strong winds blow across this area from February to June from the west and southwest. These winds can dry the soil profile quickly at a time critical for cool-season plant growth. These winds also carry soil particles that can severely damage the plants on this site.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	164	196
Freeze-free period (days):	190	218
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

Climate Stations:

Station ID	Location	Period	
		From:	To:
290205	Alamogordo Dam, NM	1972	2000
293292	Fort Sumner, NM	01/01/14	2000
297254	Ramon 8SW, NM	03/04/57	122/31/01
298596	Sumner Lake, NM	01/01/21	12/31/01
299851	Yeso, NM	01/01/48	12/31/01

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this site are shallow to very shallow over hard caliche. The surface texture ranges from fine sandy loam to sandy loam. Depth is usually less than 10 inches occurring over hard caliche. The soils are well drained. Permeability is rapid to moderately rapid. Available water-holding capacity is low. The plant-water-air-soil relationship is good.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Fine sandy loam
2. Sandy loam
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Sandy

Surface Fragments <=3" (% Cover): N/A

Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): 15 to 35

Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Moderately slow</u>	<u>Moderately rapid</u>
Depth (inches):	<u><10</u>	<u>20</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>2.00</u>
Sodium Absorption Ratio:	<u>N/A</u>	<u>N/A</u>
Soil Reaction (1:1 Water):	<u>7.4</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl₂):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>3</u>	<u>6</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

This site is a grassland characterized by a mixture of warm-season, short and mid-grasses with half-shrubs and shrubs widely scattered. Woody species and forbs are a minor component of the plant community. Forbs are plentiful during years of abundant rainfall. Cool-season grasses make a minor component of the plant community.

Canopy Cover:

Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	35 – 45
Surface gravel	0
Surface cobble and stone	0 – 5
Litter (percent)	5 – 10
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	400	680	960
Forb	50	85	120
Tree/Shrub/Vine	50	85	120
Lichen			
Moss			
Microbiotic Crusts			
Total	500	850	1,200

Plant Community Composition and Group Annual Production:**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black Grama	128 – 170	128 – 170
2	BOCU	Sideoats Grama	85 – 128	85 – 128
3	SCSC	Little Bluestem	85 – 128	85 – 128
4	HENE5 HECO26	New Mexico Feathergrass Needleandthread	85 – 128	85 – 128
5	BOHI2 BOGR2	Hairy Grama Blue Grama	128 – 170	128 – 170
6	SPCR	Sand Dropseed	26 – 43	26 – 43
7	ARIST	Threeawn spp.	26 – 43	26 – 43
8	2GRAM	Other Grasses	26 – 43	26 – 43

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	CRPOP ERIOG PLPA2	Leather Croton Wildbuckwheat Woolly Indianwheat	26 – 43	26 – 43
10	2FP 2FA	Other Perennial Forbs Other Annual Forbs	26 – 43	26 – 43

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	KRLA2 YUGL	Winterfat Small Soapweed Yucca	26 – 43	26 – 43
12	JUMO RHTR NOMI	Oneseed Juniper Skunkbush Sumac Sacahuista	26 – 43	26 – 43
13	2SD	Other Shrubs	26 – 43	26 – 43

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: sand muhly, sand bluestem, mesa dropseed, plains bristlegrass, red lovegrass, wolftail, bush muhly, Indian ricegrass and Arizona cottontop.

Other shrubs that could appear on this site include: cholla cactus, broom snakeweed, sand sagebrush and Bigelow sagebrush.

Other forbs that could appear on this site include: scarlet globemallow, silverleaf nightshade, verbena, annual mustard and astragalus spp.

Plant Growth Curves

Growth Curve ID 4024NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed short and mid-grass warm-season grassland with minor components of cool-season grasses, forbs and shrubs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat, which support a resident animal community that is characterized by pronghorn antelope, blacktailed jackrabbit, spotted ground squirrel, plains pocket mouse, southern plains woodrat, horned lark, scaled quail and round-tailed horned lizard.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Kolar	D
Palo	D

Recreational Uses:

Recreation potential is limited. Suitability for camping, picnicking and hiking are poor to fair and limited mainly by lack of live water and shade. Hunting is good for antelope, quail, dove and small game. The terrain typical of the “wide open spaces” enhances aesthetic appeal. The natural beauty of this site is enhanced by the variety of flowering plants that bloom from early spring to late fall with the availability of precipitation.

Wood Products:

This site produces no significant wood products. There may be enough wood produced for campfire purposes.

Other Products:**Grazing:**

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Approximately 80 percent of the total annual yield are from species that furnish forage to grazing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as black grama, sideoats grama, little bluestem and New Mexico feathergrass to decrease. Species most likely to increase are hairy grama, sand dropseed, threeawn spp., oneseed juniper, sacahuista and skunkbush sumac. As the ecological conditions deteriorate, it is accompanied by a sharp increase of hairy or blue grama. Most of the mid-grass species will disappear as the deterioration advances. In some area, there may be large patches of skunkbush sumac, sacahuista or oneseed juniper that will increase to the point that it is dominating the site. As the condition deteriorate, it is usually accompanied by the loss of plant cover which causes a wind erosion hazard and a loss of productivity. A system of deferred grazing, which varies the time of grazing and rest in pastures during successive years is needed to maintain or improve the plant community. Rest during April, May and June benefit cool-season species such as New Mexico feathergrass and needleandthread. Late spring and summer rest is needed for little bluestem and sideoats grama to grow and reproduce. Rest during the winter is beneficial mainly to black grama. Cattle show a definite preference to black grama during the late winter and it is usually over utilized. Winter rest will reduce the grazing pressure on black grama. Where sheep have historically grazed New Mexico feathergrass or needleandthread grass may increase and dominate the site.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month****Similarity Index****Ac/AUM**

100 - 76

2.4 – 3.2

75 – 51

3.0 – 4.3

50 – 26

4.0 – 6.9

25 – 0

6.9+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	D	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	D	P	P	P	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	D	P	P	P	D	D	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/A	D	D	D	P	P	P	P	P	P	D	D	D

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Perennial & Annual Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Perennial & Annual Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D

Associated sites:

Similar sites:

State Correlation:

Inventory Data References:

Type Locality:

Section:

General Legal Description: